NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

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Demand Response in Wholesale Markets
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1. Good morning. I appreciate the opportunity to participate in today's Technical Conference on Demand Response in Wholesale Markets, and in particular on this panel dealing with **Measurement and Evaluation of Demand Response Resources**.

2. The mission of the North American Electric Reliability Corporation, in its role as the Electric Reliability Organization, is to improve the reliability and security of the bulk power system in North America. To achieve that, NERC:

   - develops and enforces reliability standards;
   - monitors the bulk power system;
   - assesses reliability annually via winter, summer, and ten-year reliability assessments;
   - evaluates owners, operators, and users for reliability and security preparedness; and
   - educates and trains industry personnel.

3. Section 39.11(b) of the Commission's regulations provide that the Electric Reliability Organization will conduct assessments of the reliability and adequacy of the bulk power system and report its findings to the Commission, the Secretary of Energy, each Regional Entity, and each Regional Advisory Body annually or more frequently if so ordered by the Commission. The first such report was NERC's *2006 Long-Term Reliability Assessment*, filed in October 2006. In November 2006, NERC also filed its *2006/2007 Winter Assessment* and expects to file its *2007 Summer Assessment* on or about May 15, 2007.

4. Each of NERC's reliability assessment reports documents the amount of demand reduction expected through two specific types of demand response programs — direct control load management and interruptible demand. Combined, these programs represent about 2.5 percent of summer peak demand (20,000 MW) in the U.S. and about 2.5 percent of winter peak demand (2,500 MW) in Canada. New or expanded demand response programs and initiatives, including peak demand pricing, energy efficiency standards and improvements, have the potential to further reduce peak demands. These specific programs directly

empower operators to interrupt load to support operational reliability requirements.

- **Direct Control Load Management**: The magnitude of customer demand that can be interrupted at the time of seasonal peak by direct control of the system operator by interrupting power supply to individual appliances or equipment on customer premises. This type of control usually reduces the demand of residential customers.

- **Interruptible Demand**: The magnitude of customer demand that, in accordance with contractual arrangements, can be interrupted at the time of the seasonal peak by direct control of the system operator or by action of the customer at the direct request of the system operator. In some instances, the demand reduction may be effected by direct action of the system operator (remote tripping) after notice to the customer in accordance with contractual provisions. For example, demands that can be interrupted to fulfill planning or operating reserve requirements are normally reported as interruptible demand.

The remaining demand response programs are captured as part of the internal demand, which includes adjustments for indirect demand-side management programs such as conservation programs, improvements in efficiency of electric energy use, rate incentives, and rebates.

5. In a preliminary summary of its *2007 Summer Assessment*, NERC is seeing an increase in total impact of direct-control load management and interruptible demand programs in a number of regions, with Florida showing the largest impact and the largest increase from 6 to 6 ½ percent of summer peak demand.

6. As the industry's use of demand response programs changes, NERC's data collection and assessment of these programs will evolve to better understand and highlight the impact of these programs on bulk power system reliability. Experience and additional study will be needed to fully understand the impact of various demand response programs on both short-term operating reliability and long-term resource adequacy.

7. In conjunction with its *2007 Long-Term Reliability Assessment*, NERC is initiating a study on the influence of demand response programs on reliability. The goal of this study is to identify what programs influence reliability and adequacy, suitable models for analyzing these impacts, and data collection requirements. NERC expects to incorporate enhancements from this work in its seasonal and long-term reliability assessments beginning in 2008.

8. NERC works closely with the Energy Information Administration (EIA) on our respective data collection activities to minimize duplication and improve efficiency. With regard to data on demand response programs, NERC is monitoring closely EIA's proposed Form 861, and in particular, Schedule 6,

which proposes to collect more detailed information on demand-side management programs. NERC plans to make use of these data collected by EIA once the new form is approved and implemented.

9. NERC has several existing reliability standards that refer to demand response:

- Standard MOD-016-1 — requires documentation identifying the scope and details of the actual and forecast demand data, net energy for load data, and controllable DSM data to be reported for system modeling and reliability analyses.

- Standard MOD 019-0 — requires annual reporting of interruptible demands and direct control load management data for at least five years and up to ten years into the future.

- Standard MOD-020-0 — requires the amount of interruptible demands and direct control load management to be made known to transmission operators, balancing authorities, and reliability coordinators.

- Standard MOD-021-0 — requires documentation of how the demand and energy effects of DSM programs (such as conservation, time-of-use rates, interruptible demands, and direct control load management) are addressed in the forecasts of peak demand and annual net energy for load.

10. NERC is also working on a resource adequacy assessment standard that will address how both supply-side and demand-side resources are considered in assessing future resource adequacy.

11. Lastly, at the direction of the Commission in Order 693, NERC is reevaluating a number of its Balance Resource and Demand standards, including a clarification of contingency reserve and regulating reserve requirements in Standards BAL-002 and BAL-005-0, respectively, to explicitly address how demand-side resources are to be considered. NERC will be posting a revised Standards Authorization Request to address these proposed changes in the near future.

12. There is a potential for substantial benefits of demand response, as noted in the Commission's report on this subject. NERC will continue to actively follow demand response programs to gain operating/planning experience with their specific attributes and their ability to enhance reliability of the bulk power system.

13. Thank you again for the opportunity to participate in this technical conference, and I look forward to answering your questions.